

Results of Directional Survey

API number:	30-025-40573		
OGRID:		Operator:	YATES PETROLEUM CORPORATION
		Property:	BOSTON BSN STATE COM # 1H

surface	ULSTR:	M	06	T 21S	R 34E
				2680 FSL	660 FWL

BH Loc	ULSTR:	E	07	T 21S	R 34E
16363	MD	11689.4	TVD	2308 FNL	705 FWL

Top Perf/OH	ULSTR:	M	06	T 21S	R 34E
11857	MD	11577.4	TVD	2194 FSL	778 FWL

Bot Perf/OH	ULSTR:	E	07	T 21S	R 34E
16303	MD	11686.5	TVD	2248 FNL	704 FWL

	MD	N/S	E/W	VD
	11818	-447.20	115.00	11578
TOP PERFS/OH	11857	-486.08	118.11	11577.39
	11882	-511.00	120.10	11577.00
	16233	-4858.30	43.60	11683.20
BOT PERFS/OH	16303	-4928.25	44.46	11686.54
	16363	-4988.20	45.20	11689.40

NEXT TO LAST	16233	-4858.30	43.60	11683.20
LAST READING	16363	-4988.20	45.20	11689.40
TD	16363	-4988.20	45.20	11689.40

Surface Location	2680	FS	660	FW
Projected BHL	2308	FN	705	FW
Location of				
Top Perfs/OH	2194	FS	778	FW
Bottom Perfs/OH	2248	FN	704	FW

SUMMARY of Subsurface Locations

Surface Location	M-06-21S-34E	2680	FS	660	FW	Vert. Depth
Top Perfs/OH	M-06-21S-34E	2194	FS	778	FW	11577.39
Bottom Perfs/OH	E-07-21S-34E	2248	FN	704	FW	11686.54
Projected TD	E-07-21S-34E	2308	FN	705	FW	11689.40

OCT 07 2013



3335 Pollok Drive
Conroe, Texas 77303

936.442.2500 (office)
936.442.2599 (fax)
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Surveyor Certification Form

Survey Company: MS ENERGY SERVICES
Surveyors Name: JARED MAYERS
Survey Job Type: RATE GYRO
Customer: YATES PETROLEUM CORPORATION
Well: BOSTON BSN STATE COM 1H
API: 30-025-40573
Surveyed from: SURFACE TO A DEPTH OF 500' MD
Survey Run Date: 3-6-13 to 3-6-13
Surface Location: LEA COUNTY, NM

HOBBS OCD

AUG 13 2013

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I certify that the data is true, correct, and complete and within the limitations of the tool set forth by MS Energy Services; that I am authorized and qualified to make this report; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by MS Energy Services.

Jared Mayers

Digitally signed by Jared Mayers
DN: cn=Jared Mayers, o=MS Energy Services, ou=MS
Survey, email=jamayers@msenergyservices.com, c=US
Date: 2013.01.02 15:46:01 -06'00'

MS Directional

MS Guidance

MS Survey

MS Wireline



Job Number: SVMO-130129
 Company: Yates Petroleum Corporation
 Lease/Well: BOSTON BSN STATE COM 1H
 Location: Lea County, NM
 Rig Name: Cactus #124
 RKB: 25'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.36°
 Grid: East To Grid North
 File name: F:\SURVEY\2013SU~1\YATES\MO\BOSTON~1\1H.SVY
 Date/Time: 07-Mar-13 / 09:27
 Curve Name: Surface - 500' M.D. (Rate Gyro)

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 179.56
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.43	162.70	100.00	-.36	.11	.36	.38	162.70	.43
200.00	.66	183.04	199.99	-1.29	.19	1.29	1.31	171.52	.30
300.00	.79	192.06	299.99	-2.54	.02	2.54	2.54	179.59	.17
400.00	.79	210.35	399.98	-3.81	-.47	3.81	3.84	187.10	.25
Last Survey Depth Recorded									
500.00	.76	206.51	499.97	-5.00	-1.12	4.99	5.12	192.62	.06

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Yates Petroleum

Eddy, NM (NAD-83)
Boston BSN State Com
#1H

OH

Design: OH

Standard Survey Report

28 March, 2013



Survey Report



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Site:	Boston BSN State Com	MD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Project	Eddy, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Boston BSN State Com		
Site Position:		Northing:	549,490.92 usft
From:	Map	Easting:	793,476.18 usft
Position Uncertainty:	2.0 usft	Slot Radius:	8-3/4 "
		Latitude:	32° 30' 28.627 N
		Longitude:	103° 30' 55.519 W
		Grid Convergence:	0.44 °

Well	#1H		
Well Position	+N/-S	0.0 usft	Northing: 549,490.92 usft
	+E/-W	0.0 usft	Easting: 793,476.18 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 30' 28.627 N
		Longitude:	103° 30' 55.519 W
		Ground Level:	3,741.0 usft

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	2/7/2013	7.38
			Dip Angle
			60.42
			Field Strength
			48,626

Design:	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			179.56

Survey Program	Date	3/28/2013		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	500.0	Survey #1 - MSGYRO1 (OH)	CB-GYRO-MS	Camera based gyro multishot
589.0	16,233.0	Survey #2 - Crescent1 (OH)	MWD	MWD - Standard
16,363.0	16,363.0	Survey #3 - PTB (OH)	BLIND	Blind drilling, where no tool is applied

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.43	162.70	100.0	-0.4	0.1	0.4	0.43	0.43	0.00	
200.0	0.66	183.04	200.0	-1.3	0.2	1.3	0.30	0.23	20.34	
300.0	0.79	192.06	300.0	-2.5	0.0	2.5	0.17	0.13	9.02	
400.0	0.79	210.35	400.0	-3.8	-0.5	3.8	0.25	0.00	18.29	
500.0	0.76	206.51	500.0	-5.0	-1.1	5.0	0.06	-0.03	-3.84	
589.0	0.60	173.10	589.0	-6.0	-1.3	6.0	0.47	-0.18	-37.54	
678.0	1.60	104.70	677.9	-6.8	-0.1	6.8	1.67	1.12	-76.85	
736.0	3.10	91.90	735.9	-7.0	2.3	7.0	2.72	2.59	-22.07	

Survey Report



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Site:	Boston BSN State Com	MD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
796.0	3.20	90.80	795.8	-7.1	5.6	7.1	0.19	0.17	-1.83
856.0	3.30	87.00	855.7	-7.0	9.0	7.1	0.40	0.17	-6.33
918.0	3.30	88.00	917.6	-6.9	12.5	7.0	0.09	0.00	1.61
1,014.0	3.10	85.40	1,013.5	-6.6	17.9	6.7	0.26	-0.21	-2.71
1,108.0	3.00	83.70	1,107.3	-6.1	22.9	6.3	0.14	-0.11	-1.81
1,203.0	2.70	85.10	1,202.2	-5.6	27.6	5.8	0.32	-0.32	1.47
1,296.0	2.50	81.00	1,295.1	-5.1	31.8	5.4	0.29	-0.22	-4.41
1,391.0	2.10	77.70	1,390.0	-4.4	35.5	4.7	0.44	-0.42	-3.47
1,486.0	2.60	78.30	1,485.0	-3.6	39.3	3.9	0.53	0.53	0.63
1,581.0	2.70	77.50	1,579.9	-2.7	43.6	3.0	0.11	0.11	-0.84
1,675.0	2.20	76.20	1,673.8	-1.8	47.5	2.2	0.54	-0.53	-1.38
1,769.0	2.20	73.60	1,767.7	-0.9	51.0	1.3	0.11	0.00	-2.77
1,864.0	1.10	75.50	1,862.7	-0.1	53.6	0.5	1.16	-1.16	2.00
1,959.0	0.40	72.20	1,957.6	0.2	54.8	0.2	0.74	-0.74	-3.47
2,054.0	0.40	319.00	2,052.6	0.6	54.9	-0.1	0.70	0.00	-119.16
2,243.0	0.50	300.20	2,241.6	1.5	53.8	-1.1	0.09	0.05	-9.95
2,433.0	0.50	302.30	2,431.6	2.3	52.4	-1.9	0.01	0.00	1.11
2,623.0	0.20	288.90	2,621.6	2.9	51.4	-2.5	0.16	-0.16	-7.05
2,812.0	0.30	13.40	2,810.6	3.5	51.2	-3.1	0.18	0.05	44.71
3,002.0	0.50	48.80	3,000.6	4.5	51.9	-4.1	0.16	0.11	18.63
3,192.0	1.40	79.10	3,190.6	5.5	54.8	-5.1	0.53	0.47	15.95
3,287.0	1.10	84.50	3,285.6	5.8	56.8	-5.4	0.34	-0.32	5.68
3,382.0	0.80	155.10	3,380.6	5.3	58.0	-4.8	1.18	-0.32	74.32
3,476.0	1.00	154.80	3,474.6	3.9	58.7	-3.5	0.21	0.21	-0.32
3,571.0	0.40	139.00	3,569.5	2.9	59.2	-2.5	0.66	-0.63	-16.63
3,666.0	0.10	77.40	3,664.5	2.7	59.5	-2.3	0.38	-0.32	-64.84
3,762.0	0.30	152.50	3,760.5	2.5	59.7	-2.1	0.30	0.21	78.23
3,857.0	0.30	128.40	3,855.5	2.1	60.0	-1.7	0.13	0.00	-25.37
3,952.0	0.60	125.60	3,950.5	1.7	60.6	-1.2	0.32	0.32	-2.95
4,047.0	0.70	116.30	4,045.5	1.1	61.6	-0.7	0.15	0.11	-9.79
4,143.0	0.70	161.80	4,141.5	0.3	62.3	0.2	0.56	0.00	47.40
4,238.0	1.00	190.00	4,236.5	-1.0	62.3	1.5	0.53	0.32	29.68
4,333.0	0.60	213.60	4,331.5	-2.3	61.9	2.7	0.54	-0.42	24.84
4,428.0	0.80	234.80	4,426.5	-3.1	61.1	3.5	0.34	0.21	22.32
4,525.0	0.90	235.50	4,523.5	-3.9	59.9	4.3	0.10	0.10	0.72
4,619.0	0.60	274.40	4,617.5	-4.3	58.8	4.7	0.61	-0.32	41.38
4,714.0	0.40	299.90	4,712.5	-4.1	58.0	4.5	0.31	-0.21	26.84
4,809.0	0.40	305.70	4,807.5	-3.7	57.5	4.1	0.04	0.00	6.11
4,904.0	0.40	296.80	4,902.5	-3.4	56.9	3.8	0.07	0.00	-9.37
4,998.0	0.20	15.30	4,996.5	-3.1	56.6	3.5	0.44	-0.21	83.51
5,093.0	0.40	327.40	5,091.5	-2.6	56.5	3.1	0.32	0.21	-50.42
5,188.0	0.30	284.00	5,186.5	-2.3	56.1	2.7	0.29	-0.11	-45.68
5,283.0	0.30	324.70	5,281.5	-2.0	55.7	2.4	0.22	0.00	42.84

Survey Report



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
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Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,377.0	0.30	1.50	5,375.5	-1.6	55.6	2.0	0.20	0.00	39.15
5,472.0	0.20	238.00	5,470.5	-1.4	55.4	1.8	0.47	-0.11	-130.00
5,567.0	0.30	294.40	5,565.5	-1.4	55.1	1.8	0.27	0.11	59.37
5,662.0	0.10	149.60	5,660.5	-1.4	54.9	1.8	0.41	-0.21	-152.42
5,757.0	0.30	343.90	5,755.5	-1.2	54.8	1.6	0.42	0.21	-174.42
5,865.0	0.10	53.70	5,863.5	-0.9	54.8	1.3	0.26	-0.19	64.63
5,960.0	0.30	39.70	5,958.5	-0.6	55.1	1.1	0.22	0.21	-14.74
6,149.0	0.40	82.20	6,147.5	-0.2	56.0	0.6	0.14	0.05	22.49
6,337.0	0.50	58.90	6,335.5	0.4	57.4	0.1	0.11	0.05	-12.39
6,432.0	0.40	233.30	6,430.5	0.4	57.5	0.1	0.95	-0.11	183.58
6,621.0	0.30	252.90	6,619.5	-0.2	56.5	0.6	0.08	-0.05	10.37
6,811.0	0.40	243.90	6,809.4	-0.6	55.4	1.0	0.06	0.05	-4.74
6,999.0	0.30	212.10	6,997.4	-1.3	54.6	1.7	0.11	-0.05	-16.91
7,189.0	0.50	207.20	7,187.4	-2.5	53.9	2.9	0.11	0.11	-2.58
7,378.0	0.60	191.00	7,376.4	-4.2	53.3	4.6	0.10	0.05	-8.57
7,472.0	0.60	311.70	7,470.4	-4.3	52.9	4.7	1.11	0.00	128.40
7,566.0	0.70	309.40	7,564.4	-3.6	52.1	4.0	0.11	0.11	-2.45
7,662.0	0.90	303.90	7,660.4	-2.8	51.0	3.2	0.22	0.21	-5.73
7,756.0	0.50	311.40	7,754.4	-2.2	50.1	2.5	0.44	-0.43	7.98
7,851.0	0.50	303.70	7,849.4	-1.7	49.4	2.0	0.07	0.00	-8.11
7,945.0	0.50	274.80	7,943.4	-1.4	48.7	1.8	0.27	0.00	-30.74
8,040.0	0.50	273.50	8,038.4	-1.3	47.8	1.7	0.01	0.00	-1.37
8,134.0	0.40	358.90	8,132.4	-1.0	47.4	1.3	0.65	-0.11	90.85
8,229.0	0.40	25.00	8,227.4	-0.4	47.6	0.7	0.19	0.00	27.47
8,323.0	0.40	14.80	8,321.4	0.3	47.8	0.1	0.08	0.00	-10.85
8,418.0	0.30	30.00	8,416.4	0.8	48.0	-0.4	0.14	-0.11	16.00
8,512.0	0.10	17.20	8,510.4	1.1	48.1	-0.7	0.22	-0.21	-13.62
8,607.0	0.30	20.20	8,605.4	1.4	48.3	-1.0	0.21	0.21	3.16
8,702.0	0.40	41.00	8,700.4	1.9	48.6	-1.5	0.17	0.11	21.89
8,796.0	0.40	32.70	8,794.4	2.4	48.9	-2.0	0.06	0.00	-8.83
8,891.0	0.90	17.50	8,889.4	3.4	49.4	-3.0	0.55	0.53	-16.00
8,986.0	0.80	78.20	8,984.4	4.2	50.2	-3.9	0.91	-0.11	63.89
9,080.0	0.40	55.90	9,078.4	4.6	51.1	-4.2	0.49	-0.43	-23.72
9,175.0	0.20	59.90	9,173.4	4.8	51.6	-4.4	0.21	-0.21	4.21
9,269.0	0.40	357.40	9,267.4	5.2	51.7	-4.8	0.38	0.21	-66.49
9,364.0	0.70	20.40	9,362.4	6.1	51.9	-5.7	0.39	0.32	24.21
9,458.0	0.50	117.00	9,456.4	6.5	52.4	-6.1	0.96	-0.21	102.77
9,553.0	0.40	100.80	9,551.3	6.2	53.1	-5.8	0.17	-0.11	-17.05
9,648.0	0.40	94.50	9,646.3	6.1	53.8	-5.7	0.05	0.00	-6.63
9,742.0	1.00	173.10	9,740.3	5.3	54.2	-4.9	1.06	0.64	83.62
9,837.0	0.30	214.20	9,835.3	4.3	54.2	-3.8	0.84	-0.74	43.26
9,932.0	0.90	278.80	9,930.3	4.2	53.3	-3.8	0.86	0.63	68.00
10,027.0	0.40	241.00	10,025.3	4.1	52.3	-3.7	0.67	-0.53	-39.79

Survey Report



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Site:	Boston BSN State Com	MD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,122.0	0.60	273.20	10,120.3	4.0	51.5	-3.6	0.36	0.21	33.89
10,216.0	0.40	334.20	10,214.3	4.3	50.8	-3.9	0.57	-0.21	64.89
10,310.0	0.40	180.80	10,308.3	4.3	50.7	-3.9	0.83	0.00	-163.19
10,405.0	0.60	262.50	10,403.3	3.9	50.2	-3.5	0.71	0.21	86.00
10,500.0	0.60	173.10	10,498.3	3.3	49.8	-2.9	0.89	0.00	-94.11
10,625.0	0.60	153.50	10,623.3	2.1	50.1	-1.7	0.16	0.00	-15.68
10,719.0	0.60	137.10	10,717.3	1.3	50.7	-0.9	0.18	0.00	-17.45
10,814.0	1.00	170.90	10,812.3	0.1	51.2	0.3	0.63	0.42	35.58
10,909.0	1.60	163.60	10,907.3	-2.0	51.7	2.4	0.65	0.63	-7.68
11,004.0	2.10	159.60	11,002.2	-4.9	52.7	5.3	0.54	0.53	-4.21
11,049.0	2.40	173.00	11,047.2	-6.6	53.1	7.0	1.34	0.67	29.78
11,099.0	3.20	179.60	11,097.1	-9.0	53.2	9.4	1.72	1.60	13.20
KOP - 11099.0' MD, 11097.1' TVD, 9.4' VS									
11,130.0	6.20	179.50	11,128.0	-11.6	53.2	12.0	9.68	9.68	-0.32
11,162.0	9.30	177.50	11,159.7	-15.9	53.3	16.3	9.72	9.69	-6.25
11,193.0	12.30	177.50	11,190.2	-21.7	53.6	22.1	9.68	9.68	0.00
11,224.0	16.10	178.50	11,220.2	-29.3	53.9	29.7	12.28	12.26	3.23
11,256.0	20.00	180.30	11,250.6	-39.2	53.9	39.6	12.31	12.19	5.63
11,272.2	22.04	181.09	11,265.8	-45.0	53.9	45.4	12.69	12.57	4.88
Cross into Lease - 11272.2' MD, 11265.8' TVD, 22.04° INC, 45.4' VS									
11,287.0	23.90	181.70	11,279.4	-50.8	53.7	51.2	12.69	12.59	4.12
11,319.0	27.30	182.00	11,308.2	-64.6	53.3	65.0	10.63	10.63	0.94
11,350.0	30.50	180.40	11,335.4	-79.6	53.0	80.0	10.62	10.32	-5.16
11,382.0	33.30	178.20	11,362.5	-96.5	53.2	96.9	9.47	8.75	-6.88
11,413.0	37.20	178.00	11,387.8	-114.4	53.8	114.8	12.59	12.58	-0.65
11,445.0	40.90	178.60	11,412.7	-134.5	54.4	134.9	11.62	11.56	1.88
11,476.0	45.10	178.20	11,435.4	-155.6	55.0	156.0	13.58	13.55	-1.29
11,508.0	48.50	177.40	11,457.3	-178.9	55.9	179.4	10.78	10.63	-2.50
11,539.0	49.80	173.10	11,477.5	-202.3	57.8	202.7	11.30	4.19	-13.87
11,571.0	50.10	169.00	11,498.1	-226.5	61.6	226.9	9.85	0.94	-12.81
11,603.0	53.50	165.60	11,517.9	-251.0	67.2	251.5	13.51	10.63	-10.63
11,634.0	58.80	164.70	11,535.2	-275.9	73.8	276.4	17.27	17.10	-2.90
11,666.0	65.20	163.70	11,550.2	-303.0	81.5	303.7	20.19	20.00	-3.13
11,697.0	72.10	163.90	11,561.5	-330.8	89.5	331.4	22.27	22.26	0.65
11,728.0	77.70	165.10	11,569.6	-359.6	97.5	360.3	18.45	18.06	3.87
11,743.8	80.40	166.42	11,572.6	-374.6	101.3	375.4	18.95	17.07	8.37
Cross into 330' Lease - 11743.8' MD, 11572.6' TVD, 80.40° INC, 375.4' VS									
11,752.0	81.80	167.10	11,573.8	-382.5	103.2	383.3	18.95	17.10	8.26
11,787.0	87.00	169.60	11,577.2	-416.6	110.2	417.4	16.47	14.86	7.14
11,818.0	90.10	172.70	11,578.0	-447.2	115.0	448.1	14.14	10.00	10.00
11,882.0	91.70	178.10	11,577.0	-511.0	120.1	511.9	8.80	2.50	8.44
11,945.0	91.80	179.40	11,575.1	-573.9	121.5	574.8	2.07	0.16	2.06
11,976.0	91.80	180.30	11,574.1	-604.9	121.6	605.8	2.90	0.00	2.90
EOC - 11976.0' MD, 11574.1' TVD, 91.80° INC, 605.8' VS									

Survey Report



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Site:	Boston BSN State Com	MD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,008.0	91.10	180.20	11,573.3	-636.9	121.4	637.8	2.21	-2.19	-0.31
12,071.0	90.00	181.10	11,572.7	-699.9	120.7	700.8	2.26	-1.75	1.43
12,134.0	89.30	181.80	11,573.1	-762.9	119.1	763.8	1.57	-1.11	1.11
12,166.0	88.60	182.00	11,573.7	-794.9	118.1	795.7	2.28	-2.19	0.63
12,229.0	88.00	182.10	11,575.5	-857.8	115.8	858.6	0.97	-0.95	0.16
12,261.0	88.30	182.20	11,576.6	-889.7	114.6	890.6	0.99	0.94	0.31
12,323.0	89.00	181.80	11,578.0	-951.7	112.4	952.5	1.30	1.13	-0.65
12,354.0	88.80	181.80	11,578.6	-982.7	111.5	983.5	0.65	-0.65	0.00
12,416.0	88.50	181.70	11,580.1	-1,044.6	109.6	1,045.4	0.51	-0.48	-0.16
12,447.0	88.50	181.70	11,580.9	-1,075.6	108.7	1,076.4	0.00	0.00	0.00
12,509.0	88.00	181.70	11,582.8	-1,137.5	106.8	1,138.3	0.81	-0.81	0.00
12,541.0	87.80	181.90	11,584.0	-1,169.5	105.8	1,170.3	0.88	-0.63	0.63
12,636.0	89.80	181.80	11,586.0	-1,264.4	102.7	1,265.2	2.11	2.11	-0.11
12,730.0	89.00	180.60	11,586.9	-1,358.4	100.8	1,359.1	1.53	-0.85	-1.28
12,825.0	89.30	180.80	11,588.4	-1,453.4	99.6	1,454.1	0.38	0.32	0.21
12,920.0	88.40	180.80	11,590.3	-1,548.4	98.3	1,549.1	0.95	-0.95	0.00
13,015.0	88.10	181.10	11,593.2	-1,643.3	96.7	1,644.0	0.45	-0.32	0.32
13,110.0	86.80	181.60	11,597.4	-1,738.2	94.5	1,738.8	1.47	-1.37	0.53
13,173.0	87.50	181.80	11,600.5	-1,801.1	92.6	1,801.7	1.16	1.11	0.32
13,205.0	87.70	181.80	11,601.9	-1,833.0	91.6	1,833.7	0.63	0.63	0.00
13,299.0	87.90	181.40	11,605.5	-1,926.9	89.0	1,927.5	0.48	0.21	-0.43
13,393.0	88.40	181.50	11,608.5	-2,020.8	86.6	2,021.4	0.54	0.53	0.11
13,488.0	89.20	182.00	11,610.5	-2,115.8	83.7	2,116.4	0.99	0.84	0.53
13,582.0	88.70	181.50	11,612.2	-2,209.7	80.8	2,210.3	0.75	-0.53	-0.53
13,677.0	88.50	181.80	11,614.5	-2,304.6	78.1	2,305.2	0.38	-0.21	0.32
13,772.0	89.90	182.00	11,615.9	-2,399.6	75.0	2,400.1	1.49	1.47	0.21
13,867.0	89.90	182.10	11,616.0	-2,494.5	71.6	2,495.0	0.11	0.00	0.11
13,961.0	88.60	182.80	11,617.3	-2,588.4	67.5	2,588.9	1.57	-1.38	0.74
14,051.7	88.60	183.28	11,619.5	-2,679.0	62.7	2,679.4	0.53	0.00	0.53
Cross into Section 7 - 14051.7' MD, 11619.5' TVD, 2679.4' VS									
14,056.0	88.60	183.30	11,619.6	-2,683.3	62.5	2,683.7	0.53	0.00	0.53
14,120.0	87.90	183.50	11,621.5	-2,747.1	58.7	2,747.5	1.14	-1.09	0.31
14,151.0	87.80	183.60	11,622.7	-2,778.0	56.8	2,778.4	0.46	-0.32	0.32
14,214.0	87.10	183.00	11,625.5	-2,840.9	53.1	2,841.2	1.46	-1.11	-0.95
14,245.0	87.10	182.90	11,627.1	-2,871.8	51.6	2,872.1	0.32	0.00	-0.32
14,340.0	86.90	183.00	11,632.0	-2,966.5	46.7	2,966.8	0.24	-0.21	0.11
14,435.0	87.70	181.80	11,636.5	-3,061.3	42.7	3,061.6	1.52	0.84	-1.26
14,529.0	87.00	181.30	11,640.9	-3,155.2	40.2	3,155.4	0.91	-0.74	-0.53
14,624.0	86.80	180.80	11,646.0	-3,250.0	38.4	3,250.2	0.57	-0.21	-0.53
14,719.0	86.50	180.30	11,651.6	-3,344.9	37.5	3,345.1	0.61	-0.32	-0.53
14,814.0	88.40	179.40	11,655.8	-3,439.8	37.8	3,440.0	2.21	2.00	-0.95
14,908.0	87.60	180.10	11,659.1	-3,533.7	38.2	3,533.9	1.13	-0.85	0.74
15,003.0	88.50	180.10	11,662.3	-3,628.7	38.0	3,628.8	0.95	0.95	0.00
15,097.0	88.50	179.60	11,664.8	-3,722.6	38.3	3,722.8	0.53	0.00	-0.53

Survey Report



Company:	Yates Petroleum	Local Co-ordinate Reference:	Well #1H
Project:	Eddy, NM (NAD-83)	TVD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Site:	Boston BSN State Com	MD Reference:	WELL @ 3766.0usft (Cactus #124 - 25' KB)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Houston R5000 Database

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,192.0	90.70	178.90	11,665.4	-3,817.6	39.5	3,817.8	2.43	2.32	-0.74	
15,286.0	90.50	179.60	11,664.4	-3,911.6	40.7	3,911.8	0.77	-0.21	0.74	
15,382.0	89.80	179.40	11,664.2	-4,007.6	41.6	4,007.8	0.76	-0.73	-0.21	
15,476.0	89.30	179.60	11,664.9	-4,101.6	42.4	4,101.8	0.57	-0.53	0.21	
15,571.0	89.20	179.80	11,666.2	-4,196.6	42.9	4,196.8	0.24	-0.11	0.21	
15,665.0	88.70	180.10	11,667.9	-4,290.6	43.0	4,290.8	0.62	-0.53	0.32	
15,760.0	89.30	180.30	11,669.5	-4,385.5	42.6	4,385.7	0.67	0.63	0.21	
15,855.0	88.50	180.50	11,671.4	-4,480.5	42.0	4,480.7	0.87	-0.84	0.21	
15,950.0	88.90	179.90	11,673.5	-4,575.5	41.6	4,575.7	0.76	0.42	-0.63	
16,044.0	87.80	179.60	11,676.2	-4,669.5	42.0	4,669.6	1.21	-1.17	-0.32	
16,139.0	88.20	179.60	11,679.5	-4,764.4	42.7	4,764.6	0.42	0.42	0.00	
16,233.0	87.30	179.30	11,683.2	-4,858.3	43.6	4,858.5	1.01	-0.96	-0.32	
16,363.0	87.30	179.30	11,689.4	-4,988.2	45.2	4,988.4	0.00	0.00	0.00	
BHL - 16363.0' MD, 11689.4' TVD, 87.30° INC, 179.30° AZI, -4988.2' N, 45.2' E, 4988.4' VS										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
11,099.0	11,097.1	-9.0	53.2	KOP - 11099.0' MD, 11097.1' TVD, 9.4' VS	
11,272.2	11,265.8	-45.0	53.9	Cross into Lease - 11272.2' MD, 11265.8' TVD, 22.04° INC, 45.4' VS	
11,743.8	11,572.6	-374.6	101.3	Cross into 330' Lease - 11743.8' MD, 11572.6' TVD, 80.40° INC, 375.4' VS	
11,976.0	11,574.1	-604.9	121.6	EOC - 11976.0' MD, 11574.1' TVD, 91.80° INC, 605.8' VS	
14,051.7	11,619.5	-2,679.0	62.7	Cross into Section 7 - 14051.7' MD, 11619.5' TVD, 2679.4' VS	
16,363.0	11,689.4	-4,988.2	45.2	BHL - 16363.0' MD, 11689.4' TVD, 87.30° INC, 179.30° AZI, -4988.2' N, 45.2' E,	

Checked By: _____ Approved By: _____ Date: _____